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healthcare IT solutions news from HIStalk
February 5, 2008

An Elegant, Focused, System-Agnostic Solution for Medication Reconciliation Saves Nurse Time, Improves Patient Outcomes: MedsTracker by Design Clinicals

Every hospital struggles with medication reconciliation. Done right, it can provide immediate and dramatic impact on patient safety. Hospitals have learned one important fact: paper processes almost never work. Today's big-box information systems, particularly when used in a multi-vendor hospital environment, don't perform medication reconciliation particularly well. The result is wasted nurse time, poorly documented processes, and a lost opportunity to not just comply with a standard of care, but to really improve that care. Design Clinicals was formed by clinicians to develop an elegant, easily implemented solution to the medication reconciliation problem. We spoke to Mary VanHoomissen, vice president of implementations for the company.

Give me some background on Design Clinicals and your products.

Design Clinicals was founded in 2005 by two physicians, an IT specialist, and a research scientist. The physicians in our group had been frustrated with the availability of systems and applications that worked for clinicians in the hospital setting, believing most slowed them down and didn't add to patient safety. They believed there had to be a better way to do things, so the company was started.

Our founder and CEO, Dr. Dewey Howell, developed applications while still in residency — Patient Pilot and OBTracker. In 2005, The Joint Commission initiated a new patient safety goal for medication reconciliation. As a result, Valley Medical Center began reviewing their processes. It very quickly became apparent that an electronic solution was required.

Dr. Howell accepted the challenge and designed MedsTracker, our flagship product. MedsTracker is a fully electronic medication reconciliation application that was truly designed to enhance the clinician's workflow — physician, nurse, and pharmacist. Patient safety is our true mission. The application had to support that workflow for the clinician, not slow them down, and make a difference for patients. I believe that's what we have done.

When was MedsTracker first introduced?

Our first site, Valley Medical Center in Renton, Washington, went live on April 3, 2007.

Have there been any other recent installations?

We're in the midst of an installation with a hospital in California and we just started with another hospital here in the Northwest in December 2007.

Design Clinicals
Healthcare IT solutions that work

FAST FACTS

PRODUCT
MedsTracker

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NOTABLE CUSTOMERS
Valley Medical Center, Renton, WA
Northwest Hospital & Medical Center, Seattle, WA
Doctors Medical Center, Modesto, CA

What is your background and what is your role in the company?

I'm a registered nurse. I have been in nursing for twenty-six years. My clinical specialty was the neurosciences. Most of my career has been spent in nursing administration. I have held many roles in nursing administration: charge nurse, supervisor, nurse manager, director, and interim VP of nursing.

What I have discovered is my love for making change happen and managing projects and moving organizations forward. For the last five or six years, the roles I've had in nursing have been focused around project management. Prior to coming to Design Clinicals, I was in information technology as a clinical project manager, transitioning the organization from paper to electronic documentation. That's where I met Dr. Howell.

I was the project manager for the implementation of MedsTracker at Valley Medical Center. I then came to work for Design Clinicals. Currently I'm the vice president for implementations. My role is to assist our clients with implementing our products.

MARY VANHOOMISSEN

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Did you and Dr. Howell leave clinical practice because you love technology?

I have to say yes, there's a love of technology, but it's not because we don't love patients. What I tell folks when they say, "You're not a real nurse any more?" I say, "Oh, no, I'm always a nurse, but my passion is to find ways to impact patients' lives on a bigger and broader scope."

And that's what I believe we are doing here as clinicians. Our number one goal is to make a difference for the people we serve, and that ultimately means the patient. Yes, our end users are clinicians who care for patients and that makes a difference. But in the end, it is about the patient in the bed. Are we making it safer? Have we saved a life? That's my passion. I feel that I have a bigger influence with what I'm doing now for the future of healthcare. I want my colleagues at the bedside to have the tools that they need to care for their patients.

Do you think technology can affect patient safety?

We can reduce the number of times there are failures in the system. For example, in the process of medication reconciliation, the patient comes in and nurses and physicians obtain a list of medications called a medication history.

The breakdown occurs when nursing prepares one list and the physician prepares another. The patient may tell the nurse something, but they don't tell the physician or vice versa, and nobody knows that there is a difference because the two lists are on paper. The information is there, but is not easily accessible. The list may be hard to read because of handwriting.

When physicians write or give verbal orders and somebody has to rewrite the list, it introduces potential for error. When we send the patient home, the physician has traditionally handwritten new orders on the chart. A nurse then transcribes those onto an education sheet, translates them into patient lay language, and hands them to the patient.

Our application and technology can do much of this work. It can translate Latin abbreviations to patient-friendly language. It takes one or two orderable sentences and translates them for the patient. Technology can help the physicians compare the lists, make decisions with the patients, and reduce medication errors.

Increasing efficiency as well as safety?

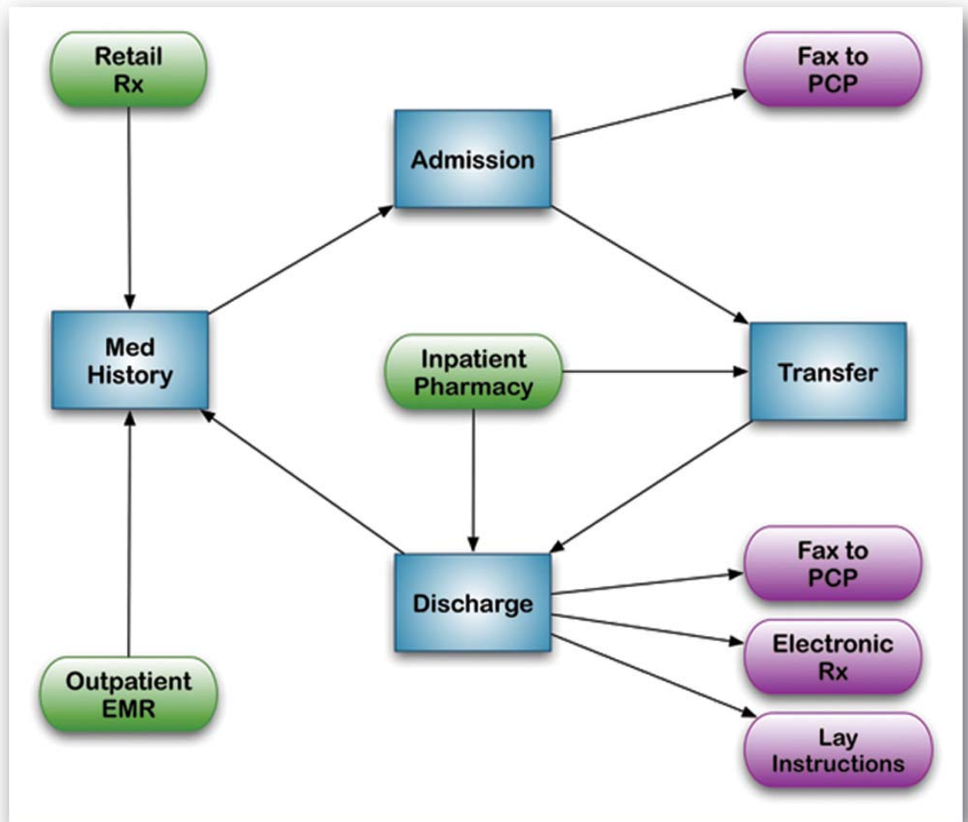
Absolutely. Increasing efficiency, increasing the accuracy of the data, and increasing legibility. Obviously it's easier

to read something typed or printed on a computer screen rather than in handwriting.

Tell me about the current installations.

MedsTracker is designed for physicians, nurses, and pharmacists – anyone who touches the medication reconciliation process. It can be used in the inpatient or the outpatient setting, as it currently is at our first client and is planned for the next two clients as well.

Whether for an outpatient procedure or a follow-up visit in a wound clinic, a medication history is taken by the clinician. The regulation requires that you compare what the patient is taking with what you are giving, if you dispense any medications or are administering sedation during the visit, or changing or adding new medications at discharge. For example, if the patient is coming in



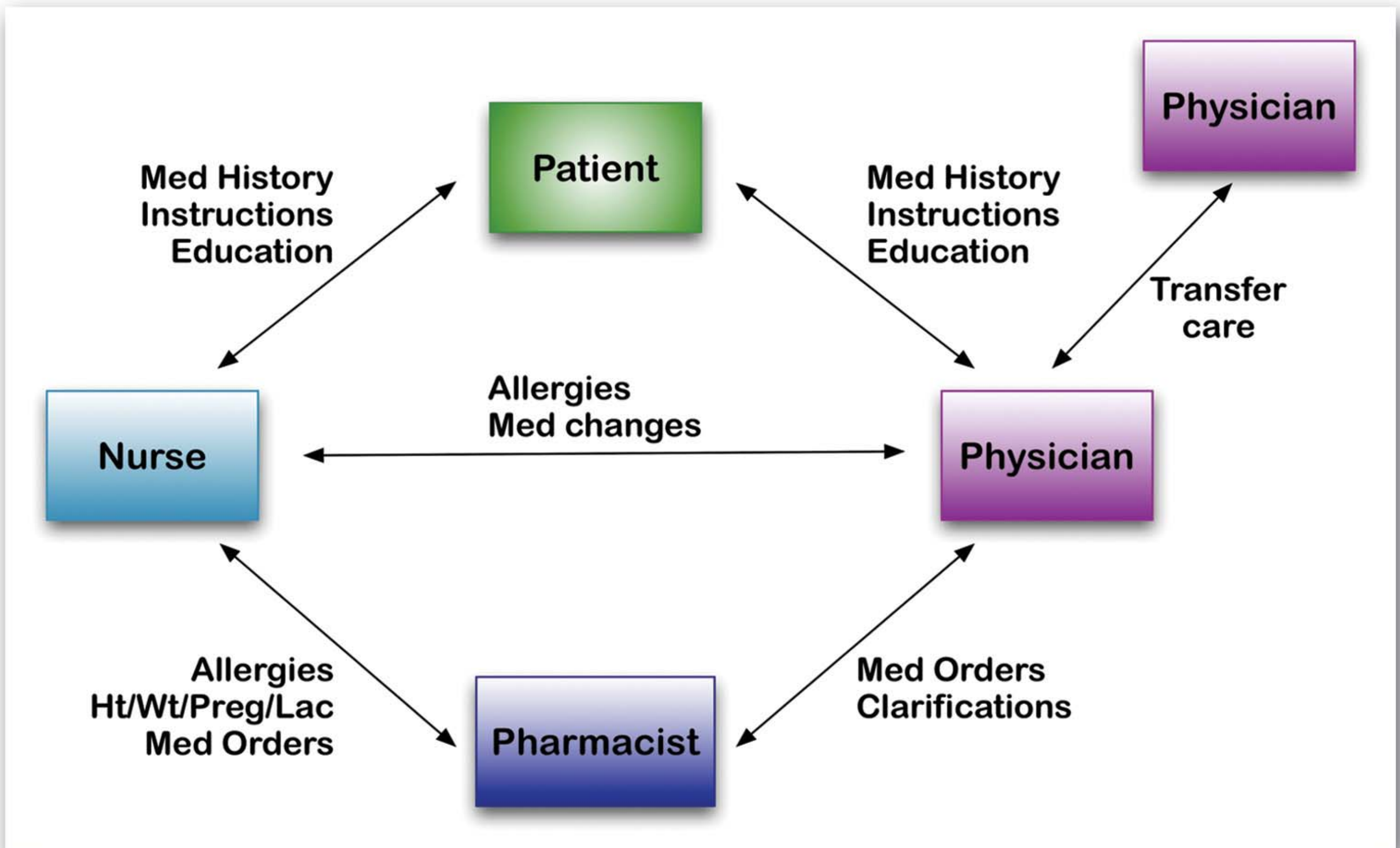
MED REC FLOW

proper, a patient may get admitted for surgery to have their hip replaced. The pre-admitting nurse may call them and gather the medication history. The physician would compare that list on admission to what they're going to order for the patient while they're in the hospital and determine whether they're going to continue, make changes, or discontinue those home medications while they're in the hospital. The orders are completed in MedsTracker and sent to the pharmacy.

While the patient is in the hospital, they may warrant a transfer to a different level of care. The transition point is another area where errors occur in the hospital setting because it's a time when medications may change rapidly. You need to have clarity around what orders are being given. Most organizations require that orders are rewritten when they transfer to a different level of care.

Within MedsTracker, the patients' active medications display in the application allowing the physician to efficiently review the medications and complete the transfer orders with minimal clicks. This enhances safety at that transition point.

At discharge, the pharmacist, nurse, and physician have the opportunity to look at the home medication list combined with the inpatient list. It's very easy to determine which medication to continue, change, or stop. The application has smart logic to know that two meds are the same, to recognize a change, and translate the information clearly for the patient. Additionally, when printing the discharge medication instructions, the nurse has the



CLINICIAN FLOW

opportunity to print a full patient monograph with education about the medication.

Give me an idea of the typical size facility that you're targeting for your solution.

We're looking at the medium-sized hospital with two to four hundred beds, though it doesn't exclude the larger organizations. We have had a lot of interest from the medium-sized hospitals, though we've also started to see interest from smaller facilities and from critical access hospitals needing an affordable solution that is easy to implement.

How do you go about determining the ROI on the products?

We know from experience and from actual end users how long it can take to do reconciliations on paper. A very conservative estimate is twenty minutes. We want our ROI to be realistic. Because our application tracks every click and tracks time, we know the average time to complete admission, transfer, and discharge is less than four minutes and the median is about a minute and thirty seconds. From this, we are able to calculate the savings per reconciliation event.

> We believe that we have a product that makes a difference. The application is Web-based. User adoption is very easy because it supports clinician workflow. It's easy to use. It's easy to install. It's very easy to maintain. MedsTracker can stand alone or integrate with other clinical systems.

Tell me about some of the enhancements you're introducing in the products.

We just implemented MedsTracker 2.0 with many new enhancements. The first is faster discharge reconciliations for the clinicians. It's faster because the home and the inpatient lists have been combined and grouped by drug name, reducing the amount of scrolling and also promoting patient safety. You can now see brand and generic names together.

MedsTracker supports allergy integration. We have an interface with Pyxis Connect for physician orders. Admission and transfer orders are signed, sending an automatic report to the pharmacy via the Pyxis Connect interface and is available in the orders queue for the pharmacist. Orders go directly to the pharmacy, reducing the time between order generation and receipt by the pharmacy.

We've added calendars to facilitate the entry of the last dose taken on med

history, and for discharge, entry of the next dose due. We have the ability to query data from other clinical systems. MedsTracker supports weight-based calculations, medication strengths, multi-line instructions, and drug monographs.

We have actual cases where primary care physicians called back in to say, "I have a different list and I'm concerned." The admission notification is over and above any regulation, but we believe it is the right thing to do for patients.

Physicians can go back in and amend their orders if needed. We have enhanced reporting capabilities for our clients. A challenge in the medication reconciliation process, regardless of what tool you use, is the accuracy and the completeness of the initial med history list. If a patient comes in and says, "Well, I take a little white pill at night and I think it's for my heart," or "I take a Lisinopril. I don't know the dose, but I know I take it every day." That provides a little more information than if we had no list, but the information is incomplete. MedsTracker highlights the med in pink as a proactive cue indicating that the entry is incomplete.

We use proactive cues in the application to alert users before taking actions. The patients with incomplete meds will display on a report to facilitate easy review and correction of the list prior to discharge. Not having an accurate list at discharge is one of the biggest dissatisfiers for physicians and one of the biggest safety risks for patients.

But it wasn't accurate before.

Yes, absolutely, it wasn't accurate before. But before, the lists were not compared. The incomplete medication report helps to improve the accuracy of the home medication list and MedsTracker groups the home meds and the inpatient meds together for discharge reconciliation.

The regulation also requires that we communicate to the next provider of care. When the patient is transferred from one level of care to another or discharged from the hospital, we need to be able to communicate to the next provider of care. MedsTracker automatically sends a fax to the primary care physician with the patient's medication list, closing the communication loop on admission and at discharge.

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A lot of CIOs out there might think it's risky to buy from a relatively small, young company. How do you address this concern?

We acknowledge it right upfront and say "Yes, we are small and yes, we are young, but we are committed to patient safety and we are clinicians."

We believe that we have a product that makes a difference. The application is Web-based. User adoption is very easy because it supports clinician workflow. It's easy to use. It's easy to install. It's very easy to maintain. MedsTracker can stand alone or integrate with other clinical systems.

Is this the company's first time going to HIMSS?

Yes. We will be first-time exhibitors with our own booth, #3923. We were attendees in 2007 and were also featured as a guest of FDB.

What are you going to be featuring? Any good trinkets or giveaways?

We will be featuring MedsTracker. If you want to see a fully electronic medication reconciliation application that really works, then you should come by and see us. Yes, we will have trinkets. Stop by to see what we have, and if you mention this interview, we'll give you a special trinket!

THE BOTTOM LINE

Don't just strive to be minimally compliant with medication reconciliation requirements by sporadic use of paper forms; use the right tools and processes to really improve patient safety.

Reduce clinician time for medication reconciliation by up to 80% or more with MedsTracker.

MedsTracker helps hospitals meet Joint Commission requirements while improving the satisfaction of their nurses.

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